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**Industrial Relations Climate and Union Commitment:
An Evaluation of Workplace-Level Effects**

Abstract

This paper examines the relationship between industrial relations (IR) climate and union commitment. Using a multi-workplace sample from North-East England, aggregation analysis provided support for treating IR climate as a workplace-level variable, and workplace IR climate was negatively associated with union commitment. However, IR climate moderated none of the relationships between individual-level antecedents and union commitment.

Keywords: union commitment; industrial relations climate.

Bamberger, Kluger, and Suchard's (1999) meta-analysis identified union instrumentality, pro-union attitudes, organizational commitment and job satisfaction as antecedents of an individual's commitment to their union. However, in concluding the paper, they suggested that: "...researchers should begin to focus their attention on how multivariate union commitment models may vary with the nature and composition of the workforce examined *as well as with environmental characteristics, such as the industrial relations context*" (Bamberger, Kluger, and Suchard 1999: 315; *our emphasis*). In this paper, we consider workplace "industrial relations (IR) climate" as one such environmental characteristic with the potential to influence employees' commitment to their union.

A workplace may be seen as having a particular IR climate, defined as the degree to which relations between management and employees are seen by participants as mutually trusting, respectful and co-operative (Hammer, Currall, and Stern 1991), or in terms of workplace norms and attitudes concerning industrial relations and union-management relations (Dastmalchian, Blyton, and Adamson 1989; Dastmalchian 2008). Dastmalchian, Blyton, and Adamson (1991) see workplace IR climate as an outcome of the organizational context and structure, human resource policies and wider industrial relations context, with climate mediating the relationship between these and industrial relations outcomes.

Studies that have considered IR climate as an antecedent of individual employee attitudes and behavior have generally conceptualized and measured IR climate at the level of the individual employee (e.g., Deery, Iverson, and Erwin 1994; Deery, Erwin, and Iverson 1999). This involves examining differences in individual perceptions of climate. However, IR climate may be more appropriately conceptualized as a characteristic of the workplace (Dastmalchian 2008), even when it is used to try to predict individual attitudes and

behavior. This is common in the literature on other types of organizational climates, where individual ratings of climate provided by members of a workplace or unit are aggregated to provide a unit-level climate rating, and this is then used to predict hypothesized outcomes at the level of the individual (e.g., Schneider, White and Paul 1998; Liao and Chuang 2004; Hofmann, Morgeson and Gerras 2003; Gavin and Hofmann 2002). This approach requires that climate be conceptualized as a characteristic of the workplace, and if individual climate ratings are to be aggregated to the workplace level then there must be evidence of some consensus within workplaces, along with inter-workplace variance in climate (James, Demaree and Wolf 1993; Bliese and Halverson 1998). Furthermore, when analyzing the antecedents of individual attitudes the fact that employees are nested within workplaces requires the use of an appropriate analytical approach, such as hierarchical linear modeling (Hofmann 1997).

In this paper, we make two main contributions. First, we evaluate whether it is appropriate to consider IR climate as a workplace-level construct, by examining the appropriate aggregation statistics. In so doing, we aim to answer the question: To what extent is it appropriate to treat IR climate as a characteristic of the workplace rather than simply as an individual perceptual variable? Second, we consider the role of IR climate in analyzing the antecedents of union commitment. We analyze IR climate at both the individual (“psychological”) and workplace levels, evaluating their relative contribution towards explaining variance in individual union commitment. This enables us to determine at which level of analysis IR climate exerts its main influence on union commitment. There have been calls for work climate researchers to make greater use of multi-level models in

the analysis of the consequences of climate (Kuenzi and Schminke 2009), and we extend this approach to the analysis of IR climate.

Theory and hypotheses

Antecedents of union commitment

Bamberger, Kluger, and Suchard (1999) identified the individual-level antecedents of union commitment commonly analyzed in previous studies. Their meta-analysis suggested that both perceived union instrumentality, defined as members' perceived impact of the union on valued outcomes such as wages and employment conditions (Fullagar and Barling 1989), and pro-union attitudes, defined as the perceived desirability of unions in general (McShane 1986), were positively associated with union commitment. Organizational commitment was also positively associated with union commitment, whilst job satisfaction had a negative association with union commitment. However, in the wider literature, there have been mixed findings on the organizational commitment- and job satisfaction-union commitment relationships (Reed, Young, and McHugh 1994; Fuller and Hester 1998), and Tan and Aryee's (2002) Singaporean study found no significant direct effect of job satisfaction on union commitment. In light of such mixed findings, we consider moderation effects (see below).

Aside from the uncertainty about organizational commitment and job satisfaction, we anticipate replicating Bamberger, Kluger, and Suchard's (1999) findings on the antecedents of union commitment. Since this stage of our analysis is designed simply to provide a baseline against which to assess the significance of IR climate, we do not specify formal hypotheses.

Industrial relations climate

Workplaces may be characterized as having a particular “climate”, defined in terms of the “norms, attitudes, feelings and behaviors prevalent at the workplace” (Dastmalchian 2008: 549). Recognising that organizational climate is multi-faceted, climate researchers have focussed their conceptualizations (Blyton, Dastmalchian, and Adamson 1987), so that we have studies of, for example, “*service* climate” (e.g., Schneider, White, and Paul 1998; Liao and Chuang 2004), “*safety* climate” (e.g., Hofmann, Morgeson, and Gerras 2003), “*procedural justice* climate” (Naumann and Bennet 2000), “*leadership* climate” (Gavin and Hofmann 2002), and “*industrial relations* climate” (e.g., Hammer, Currall, and Stern 1991; Dastmalchian 2008). The notion is that if climate is to be linked with outcomes there must be a correspondence between climate and outcomes (Dastmalchian 2008: 552).

A workplace has an “industrial relations (IR) climate” to the extent that the organizational and industrial relations context “generates a distinctive atmosphere in the organization ... as perceived by the organizational members” (Dastmalchian, Blyton, and Adamson 1989: 23). More specifically, IR climate has been defined in terms of workplace norms and attitudes concerning industrial relations (Blyton, Dastmalchian, and Adamson 1987; Dastmalchian, Blyton, and Adamson 1989; Dastmalchian 2008), and as the degree to which the labor-management relations are cooperative or conflictual, reflected in the extent to which relations between management and employees are seen by participants as mutually trusting, respectful and co-operative (Hammer, Currall, and Stern 1991).

In considering climate, we are discussing a contextual factor: the perceived state of employee-management relationships in a particular workplace. There have been studies of IR climate entirely at the organizational or workplace level of analysis. In some studies this has involved single-respondent (managers or union officials) assessments of organizational

IR climate and organizational performance, typically finding positive associations between climate and performance (Wagar 1997a; 1997b; 2002). Others have used employee assessments aggregated to the workplace level, suggesting positive associations between workplace-level IR climate on the one hand, and workplace-level organizational commitment and union loyalty on the other (Deery and Iverson 2005).

However, to the extent that previous studies have considered IR climate as an antecedent of *individual* employee attitudes and behavior, it has been measured and analyzed at the level of the individual employee (e.g., Deery, Iverson, and Erwin 1994; Deery, Erwin, and Iverson 1999). Such an approach, especially with a sample drawn from a single workplace or organization, essentially examines differences in individual perceptions, so-called “psychological climate” rather than “organizational climate” (Dastmalchian 2008; Kuenzi and Schminke 2009). However, our concern is with workplace context, so that IR climate may be more appropriately conceptualized at the workplace level. The argument is that climate is a characteristic of a particular workplace, reflecting the history, management style and industrial relations context, reflecting more than simply the individual psychology of climate survey respondents. According to this view, climate reflects to some degree the shared experience and perceptions of members of the workplace.

This still leaves us with the problem of how to assess climate. A common approach in the climate literatures generally is to aggregate individual ratings of climate provided by members of a particular unit or workplace (e.g., Schneider, White, and Paul 1998; Liao and Chuang 2004; Hofmann, Morgeson, and Gerras 2003; Gavin and Hofmann 2002). This approach draws on a direct consensus model, seeing climate as a property of the group (workplace), formed by aggregating group-member ratings, and requiring a degree of

group consensus to justify aggregation (Chan 1998; Schneider, Salvaggio, and Subirats 2002; Kuenzi and Schminke 2009). This aggregated assessment reflects the extent to which, on average, climate is seen as positive in a particular workplace. This is the approach taken in this paper. We collect individual employee ratings of IR climate in a sample of workplaces, and we assess the statistical evidence favoring the aggregation of individual scores to the workplace level. This implies, as Kuenzi and Schminke point out regarding organizational climates in general, that "...the origins of organizational climate lie in individual perceptions: however, it is a property of the unit" (2009: 638)

The consequences of industrial relations climate

There is reason to believe that IR climate may influence union commitment. One suggestion, from social exchange theory, is that there is a credit effect as members value a positive IR climate as part of a positive social exchange and credit both the union and the organization with responsibility for this, resulting in higher commitment to both (Magenau, Martin and Peterson, 1988; Deery and Iverson 2005). There may also be a cognitive consistency effect (Angle and Perry 1986; Magenau, Martin and Peterson, 1988). In a positive IR climate, union members are less likely to perceive a conflict between their roles as employees and as union members, making it easier for them to feel strong commitment to both union and organization simultaneously. In contrast, a negative IR climate results in perceived role conflict, with individuals feeling uncomfortable committing to both organization and union, so that they feel obliged to choose between commitment to either union or organization.

Both the credit and cognitive consistency arguments suggests a positive association between IR climate and union commitment. However, there have been mixed findings on

the association between IR climate and union commitment. Several US studies have found a positive relationship (e.g., Angle and Perry 1986; Magenau, Martin, and Peterson 1988), but Deery, Iverson, and Erwin (1994), in a study of Australian public sector workers, found a *negative* association between IR climate and union commitment. This negative association may reflect a stronger felt need for union representation and protection in a negative, conflictual work context, with members responding by showing stronger commitment to the union. There is corroboration for such an effect in the suggestion that union commitment increases during industrial conflict (Stagner and Efflal 1982), and in Mellor's (1990) finding that union commitment is higher where the union is under threat from membership loss. Similarly, Mellor (1990: 259) reports findings from earlier studies suggesting that positive in-group evaluations and cohesion, support for union activity and attitudinal support for union militancy are all associated with union-management conflict. In contrast to the positive "credit/cognitive consistency effect", such arguments suggest a "threat effect", involving a negative association between IR climate and union commitment.

So far, these arguments have been couched largely in terms of individual psychology. However, in suggesting a link between workplace IR climate and union commitment, we need to consider group-level dynamics. In their discussion of procedural justice climate, Naumann and Bennett (2000) argue that workplace procedures represent group values and that coworkers influence each others' perceptions of the workplace climate, along with their attitudinal and behavioral responses to that climate, so that "[t]hrough socialization, group members learn about incidents in which group values have been violated (such as a supervisor's having treated the group unfairly) and about how other members reacted to such incidents" (Naumann and Bennett 2000: 884). Such group

dynamics are also likely to operate with respect to workplace IR climate and union commitment, generalizing and amplifying the individual psychological effects discussed above, as individuals are socialized into a more or less shared understanding of the workplace IR climate and of the appropriate response. Such group processes will not necessarily privilege either positive or negative effects on union commitment, but what they will do is to imbue such effects with group (i.e., workplace) properties.

Given the conflicting expectations, with potential “credit/cognitive consistency” and “threat” effects having opposite signs, we offer no directional hypothesis on the relationship between IR climate and union commitment. Instead, we evaluate the relationship as an open question. Unlike earlier studies, we examine the association between IR climate and union commitment at both the psychological and workplace climate levels. In particular, we test whether workplace IR climate explains variance in union commitment over and above that explained by individual-level psychological IR climate. Thus, we offer the following non-directional hypothesis:

Hypothesis 1. Workplace IR climate explains variance in individual union commitment over and above that explained by psychological IR climate.

In addition to the direct effect, IR climate may moderate several of the antecedent relationships in predicting union commitment. For example, whilst most studies have shown a positive association between organizational commitment and union commitment (e.g., Magenau, Martin, and Peterson 1988), some show a negative association (Reed, Young, and McHugh 1994; Fuller and Hester 1998), and IR climate has been identified as a possible moderator of this relationship. Again, a cognitive consistency argument applies: Where IR climate is positive, individuals may feel comfortable committing to both

organization and union, whereas an adversarial climate may mean that individuals feel that the two commitments are inconsistent, so that they must choose to “side” with either employer or union (Fuller and Hester 1998; Magenau, Martin, and Peterson 1988). Similarly, in their meta-analysis, Fuller and Hester (1998) found that IR climate moderated the relationship between job satisfaction and union commitment, with a positive relationship in a cooperative climate and a negative relationship in an adversarial climate. In addition, they found a weaker positive relationship between union instrumentality and union commitment in less adversarial IR climates, arguing that this “... is most likely due to the fact that basic economic needs are being satisfied” (Fuller and Hester 1998: 183), so that presumably union instrumentality will be less salient than in a highly adversarial climate. Finally, they found that the positive relationship between pro-union attitudes and commitment was stronger in more adversarial climates, where the ideological and socialization messages transmitted by pro-union co-workers and representatives are likely to be more urgent (Fuller and Hester 1998).

Based on these arguments and on Fuller and Hester’s (1998) meta-analytic findings, we offer the following hypotheses, specified at the workplace level:

Hypothesis 2. Workplace IR climate moderates the relationship between a) organizational commitment and b). job satisfaction on the one hand, and union commitment on the other, such that these relationships are more strongly positive where IR climate is positive.

Hypothesis 3. Workplace IR climate moderates the relationship between a). instrumentality and b). pro-union attitudes on the one hand, and union commitment on the other, such that these relationships are more strongly positive where IR climate is negative.

Method

Sample

The sample was identified through the Arbitration, Conciliation and Advisory Service (ACAS), a publicly-funded but independent organization with a mission to improve employment relations. We used the ACAS North East officers' contacts list to approach HR officers or senior managers to request participation in the study, and 114 workplaces initially agreed to participate. Each workplace was sent a pack consisting of a questionnaire to be completed by the on-site manager responsible for HRM, a questionnaire for the senior general manager on site, and fifty questionnaires to be distributed to a sample of employees. In addition, if the workplace recognized trade unions (identified from the initial telephone call), questionnaires for up to 5 union representatives were included. Questionnaires had a workplace identifier and were returned direct to the University. We received at least partial responses from 60 workplaces, a 53 percent response rate. We received 867 responses from employees in these workplaces.

In this paper, we use only the employee responses, and we restrict our analysis to non-managerial, unionized employees. We excluded those workplaces which had fewer than 3 individual respondents in our sample. This reduced the sample for analysis to 31 workplaces and 334 employees. Although not a strictly representative sample, the respondents cover the main sectors of employment in North East England (Office for National Statistics, 2008) with an emphasis on manufacturing (e.g. light engineering, processed food, brewing, pharmaceuticals, chemicals) and the public sector (healthcare, local government, universities, civil service, and uniformed services - police, fire and ambulance). Small firms are less likely to use ACAS service and we deleted those with

fewer than 3 union members, so that small firms are underrepresented in our final sample. Also, given their lower unionization rates, private services (e.g., TV, hotels, transport, and privatized utilities) were underrepresented.

Amongst this employee sample, average age was 40.84 and organizational tenure 13.13 years. Forty-two percent were female, 75 percent were married, 14 percent worked part time and two percent were on a temporary contract. Twenty-five percent were in professional jobs, 29 percent worked as operators or in assembly jobs, 14 percent were clerical or secretarial, 12 percent were in craft or skilled jobs, 9 percent in personal or protective service jobs, 5 percent were technicians, and the rest were in other job categories. The workplaces ranged from 77 to 1,500 employees, with 45 percent in manufacturing, 13 percent private-sector services, and 42 percent in the public sector. Union member responses per workplace ranged from 3 to 37.¹

Measurement

In this paper, all measures were taken from the employee questionnaire. Unless otherwise mentioned, responses were on a seven-point scale from “Strongly disagree” (=1) to “Strongly agree” (=7). For job satisfaction we used the three-item measure of overall satisfaction from the Michigan Organizational Assessment Questionnaire (Spector 1997). Organizational commitment involved four items based on Meyer and Allen’s (1997) affective dimension, with all items positively worded, for example: “I really feel as if this organization’s problems are my own”. These four items were chosen from the revised six-item affective organizational commitment scale (Meyer and Allen 1987: 118). We excluded two items (“I would be very happy to spend the rest of my career in this organization” and “I do not feel like ‘part of the family’ at my organization”), because we

wanted to have parallel measures for affective commitment to organization and union (see below), and we felt that these two items lack face validity in a union context. Union instrumentality was based on Sverke and Kuruvilla's (1995) measure of "instrumental rationality-based commitment", reflecting the satisfaction of salient personal goals. This included seven items, formed by taking the square root of the product of an item such as "The union's chances of improving my pay are great" and a corresponding item such as "To get higher pay is...". (The latter was answered on a 7 point scale anchored from 1 (*very unimportant to me*) to 7 (*very important to me*). We used the full scale, except we replaced one pair of items, referring to the union's chances of bringing a general improvement in "my work situation", which we felt was rather vague, with a more specific item referring to the provision of membership benefits by the union. General pro-union attitudes refers to attitudes towards unions in general, and was measured with six items based on McShane (1986), for example: "Unions are a positive force in this country". We dropped two items from the original eight-item scale, one because it appeared to reflect an assumption of compulsory union membership ("If I had to choose I would probably not be a member of a labor union") and the other because it appeared largely to duplicate one of the other items ("Most people are better off without labor unions").

Union commitment was measured with four items based on Meyer and Allen's (1987) affective commitment scale. These paralleled those used to measure organizational commitment, but were adjusted to include the union as the focus. We adjusted the Meyer and Allen scale rather than used the Gordon et al (1980) union commitment scale. Having examined the Gordon et al scale, many of the items appeared to us to be meaningful only in a US context, and we feared that some of the language would be unintelligible to a UK

sample. Instead, we adjusted the focus of Meyer and Allen's well-established affective commitment construct to "the union". Such an approach has been widely used in the multiple commitments and related literatures, to develop scales measuring commitment to occupation, to the supervisor and workgroup, to organizational change, and to the union (Meyer, Allen, and Smith 1993; Clugston, Howell, and Dorfman 2000; Herscovitch and Meyer 2002; Redman and Snape 2005). It is worth noting that the affective union commitment construct has been shown to correlate with the Skarlicki and Latham (1996) measure of union citizenship behavior (Snape and Redman, 2007).

We measured IR climate using Hammer, Currall, and Stern's (1991) six-item "labor relations climate" scale, which aims to assess whether labor-management relations in a particular workplace are cooperative or conflictual, reflected in the extent to which relations between management and employees are seen by participants as mutually trusting, respectful and co-operative (Hammer, Currall, and Stern 1991). It is important to emphasise that this scale asks about industrial relations in the workplace, rather than about the individual's own relationship with management or the organization. Deery, Iverson, and Erwin (1994) used this scale in their individual-level investigation of the effect of IR climate on union and organizational commitment. We used all six items from the original scale, and each employee rated the IR climate within their particular workplace. These individual-level ratings provided a measure of psychological IR climate. We also aggregated these individual ratings within each workplace to provide a measure of workplace IR climate (aggregation statistics are reported below).

We assessed an overall individual-level measurement model, including all six latent constructs, job satisfaction, organizational commitment, union instrumentality, pro-union

attitudes, union commitment, and IR climate. This provided a reasonable fit ($\chi^2 = 795.947$; $df = 390$; $GFI = 0.863$; $CFI = 0.933$; $RMSEA = 0.056$), and all indicators loaded significantly ($p < 0.001$) on their latent variables. A single-factor model provided a poor fit ($\chi^2 = 4218.423$; $df = 405$; $GFI = 0.376$; $CFI = 0.371$; $RMSEA = 0.168$), with a significant deterioration in chi-square (change in $\chi^2 = 3422.476$; change in $df = 15$; $p < 0.01$), and marked differences in the other fit indices (e.g., change in $CFI = .562$). This provided support for the hypothesized measurement model.

Results

Individual-level means, standard deviations, correlations and alphas (all exceeding .8) are shown in table 1. Hypothesis 1 involved first assessing the appropriateness of aggregating individual employee scores on IR climate. We calculated within-group inter-rater reliabilities, r_{wg} , for each workplace (James, Demaree and Wolf 1984; 1993), along with intra-class correlation coefficients, ICC(1) and ICC(2) (Bliese and Halverson 1998). Median r_{wg} was 0.81, indicating an acceptable level of within-group agreement. ICC(1) was 0.23, showing that a significant amount of variance resides at the workplace level. An ICC(2) of 0.75 suggested that workplaces can be differentiated in terms of employee ratings of IR climate. These findings compare favorably with values found in the literature (e.g., Schneider, White, and Paul 1998), and provide statistical support for treating IR climate as a workplace-level variable.

We evaluated the effects of workplace IR climate using hierarchical linear modeling (HLM), with union commitment as the dependent variable, and with job satisfaction, organizational commitment, pro-union attitudes and union instrumentality as the individual-level independent variables. This provided a benchmark against which to

assess the role of IR relations climate, included first as a level-1 (individual) variable and then as a level-2 (workplace) variable. We adopted a staged approach, as shown in table 2, beginning with a null model, with no level-1 or level-2 predictors. This is essentially a one-way analysis of variance, and the ratio of between-group to total variance provided an intra-class correlation coefficient (ICC) of 0.063, suggesting that 6.3 percent of the variance in union commitment may potentially be explained by level-2 predictors. Although the ICC was relatively small, there was significant between-group variance in union commitment, so that it was appropriate to examine level-2 predictors.

Next, we estimated model 2, with level-1 predictors only. Union instrumentality ($\gamma = .55, p < .001$) and pro-union attitudes ($\gamma = .50, p < .001$) emerged as the main antecedents of union commitment, with no significant direct effect for job satisfaction ($\gamma = -.05, p > .10$). Organizational commitment had a significant but small positive effect ($\gamma = .12, p < .05$). We added psychological IR climate in model 3, to control for this prior to adding workplace-level climate. At this stage, psychological IR climate was significantly negatively associated with union commitment ($\gamma = -.13, p < .05$), suggesting that those who perceived climate more positively had lower union commitment.

The existence of unexplained variance in level-1 intercepts or slopes is a precondition for testing group-level effects. Model 3 showed a significant random variance component for the intercept, so that in model 4, we included workplace IR climate as a level-2 predictor of union commitment. Workplace IR climate had a significant negative effect on union commitment ($\gamma = -.31, p < .01$). Once the level-2 workplace IR climate was included, level-1 psychological IR climate was not significant ($\gamma = -.07, p > .10$),

demonstrating that IR climate had its effects at the workplace level, rather than as an individual perceptual variable, and providing support for hypothesis 1.

The results for model 4 suggested significant random variance only for pro-union attitudes and instrumentality, and not for organizational commitment and job satisfaction. Therefore, in model 5, we added IR climate as a moderator for pro-union attitudes and union instrumentality only. However, there were no significant moderation effects, with both interactions non-significant ($\gamma = -.06, p > .10$; and $\gamma = -.08, p > .10$). Overall, there was no support for hypotheses 2 and 3.

We were concerned that the association between workplace IR climate and union commitment might reflect sectoral differences, rather than an underlying relationship between IR climate and union commitment. We therefore repeated the HLM analysis with level-2 control variables for industry sector. This involved two dummy variables, representing public services and manufacturing, with others as the reference category. With workplace-level IR climate included, neither control variable was statistically significant (public services: $\gamma = -.47, p > .10$; and manufacturing: $\gamma = -.11, p > .10$), and the pattern of significant results was unchanged from that shown in table 2, with workplace IR climate significant ($\gamma = -.20, p < .05$) and psychological climate not ($\gamma = -.07, p > .10$).

Collective bargaining level might also confound the association between workplace IR climate and union commitment. We therefore conducted a similar analysis for bargaining level, with two level-2 control variables representing organization-wide and industry/sector bargaining, with workplace-level bargaining as the reference category. With workplace-level IR climate also included, the industry/sector-wide bargaining variable was statistically significant ($\gamma = -.35, p < .01$), but that for organization-wide

bargaining was not ($\gamma = .13, p > .10$). However, the other conclusions were essentially unchanged, with workplace-level IR climate still statistically significant ($\gamma = -.20, p < .05$) and psychological climate not ($\gamma = -.07, p > .10$). These findings suggest that the association between workplace IR climate and union commitment was not a reflection of sector nor of the level at which collective bargaining was conducted.

Finally, we repeated the analysis with individual-level control variables included. None of the control variables were statistically significant in the final equation (gender [$\gamma = -.07, p > .10$], organizational tenure [$\gamma = -.00, p > .10$], part-time vs. full-time job status [$\gamma = -.32, p > .10$], temporary vs. permanent employment contract [$\gamma = -.03, p > .10$]), and there were no significant differences in the findings for other variables compared to table 2. In particular, workplace-level IR climate was still statistically significant ($\gamma = -.28, p < .01$) and psychological climate was not ($\gamma = -.06, p > .10$).

Discussion

We set out to address two key questions about industrial relations climate. First, to what extent is it appropriate to treat IR climate as a characteristic of the workplace rather than simply as a perceptual variable, varying primarily at the level of individual survey respondent? Second, what is the role of IR climate in analyzing the antecedents of union commitment? On the first of these questions, our aggregation analysis provided support for the treatment of IR climate as a workplace-level variable, with a relatively high level of inter-rater agreement within workplaces, significant between-workplace variance, and evidence that workplaces could be differentiated in terms of employee ratings of IR climate. These findings support the aggregation of employee ratings of IR climate to the workplace level, providing evidence that these are indeed measuring workplace “climate”,

rather than purely individual perceptions with variance solely at the inter-individual level (Schneider, White, and Paul 1998). Furthermore, on our second question, IR climate was negatively associated with union commitment, but only as a workplace-level variable. Individual-level “psychological” IR climate was not significantly associated with union commitment once workplace-level IR climate was included in the analysis.

Our finding of a negative association between IR climate and union commitment is consistent with Deery, Iverson, and Erwin’s (1994) individual-level Australian analysis, rather than with the North American studies that have found a positive relationship between IR climate and union commitment (Angle and Perry, 1986; Magenau, Martin, and Peterson 1988). In interpreting our finding, the negative association between IR climate and union commitment may reflect a tendency for members to feel less of a need for union protection where the workplace context is positive. Thus, where the IR climate is cooperative, members may be less likely to commit strongly to their union, an organization which has protection and grievance handling as its *raison d’être*. The earlier US studies have been taken to suggest that unions would be advised to “...change their adversarial images and to develop cooperation-oriented strategies” (Angle and Perry, 1986: 46). In contrast, Deery et al. conclude that “...the effects of any initiatives to improve the ambient labour-management climate may be more problematic than was initially implied in the US literature” (Deery, Iverson, and Erwin 1994: 593). Our UK results provide some additional support for the latter view in a non-US context, suggesting that unions do not necessarily gain from the development of a positive IR climate, at least in terms of winning member support. The inconsistency between the US findings on the one hand and those of Deery et

al and our study on the other suggests that further research is needed to evaluate this relationship, conducted in a variety of country and sector contexts.

Of course, in interpreting our findings in this way, we have assumed that union commitment is predicted by job satisfaction, organizational commitment, union instrumentality, pro-union attitudes and IR climate. In doing so, we have adopted the conventional approach from the union commitment literature (e.g., Bamberger, Kluger, and Suchard 1999; Angle and Perry 1986; Magenau, Martin, and Peterson 1988; Deery, Iverson, and Erwin 1994). However, we cannot completely rule out reciprocal or reverse causation, with union commitment having an impact on workplace IR climate, for example if high levels of member commitment allow a union to be more assertive or militant. Further examination of this issue would require longitudinal research.

We found no evidence that workplace-level IR climate significantly moderates any of the relationships between union commitment and its antecedents. Thus, the relationships between organizational commitment, job satisfaction, pro-union attitudes and union instrumentality appear to be similar across workplaces, regardless of the workplace IR climate. This provides no support for the IR climate moderation arguments advanced in the literature (Fuller and Hester 1998; Magenau, Martin, and Peterson 1988). These suggestions were based on arguments about “cognitive consistency” between organizational and union commitments in a cooperative IR climate, along with suggestions that instrumentality, and ideological and socialization influences may be more salient in an adversarial climate (Fuller and Hester 1998). Taken at face value, our findings suggest that such arguments are incorrect, and that unit IR climate has no moderating effects on these relationships. However, significant interactions can be difficult to find, and our sample is

relatively small in terms of the number of workplaces and individuals, suggesting that statistical power may be an issue (Hofmann, 1997). We therefore view our conclusions on the moderating effects of IR climate as tentative, and future research with larger samples would be justified.

We also sought to replicate the earlier findings on the individual-level antecedents of union commitment, primarily to provide a baseline for our analysis of IR climate. Our findings suggested that instrumentality, pro-union attitudes and organizational commitment were positively associated with union commitment, as in Bamberger, Kluger, and Suchard's (1999) meta-analysis. However, job satisfaction was not significantly associated with union commitment, which differs from Bamberger, Kluger, and Suchard, who found a negative relationship. Nevertheless, our finding is consistent with some of the earlier studies (e.g., Fuller and Hester 1998; Tan and Aryee 2002).

Our findings must be interpreted in light of the limitations of the study. First, we have already mentioned the relatively small sample size. Our confidence in the conclusion that workplace IR climate is negatively associated with individual-level union commitment, explaining variance over and above that accounted for by individual-level predictors, is not threatened by sample size. In fact, our relatively small sample provides a conservative test of this hypothesis (Vandenberghe, et al. 2007). As already mentioned, our finding of no significant cross-level effects is more problematic, and we emphasize that this conclusion must be treated with caution and awaits testing with a larger sample. Second, as we have seen, since the study was cross-sectional we cannot be definitive about causation, and further research of a longitudinal nature would be useful. Third, our findings may be susceptible to common method bias, since all our measures originated from the employee

survey. However, our measurement model provides evidence of discriminant validity for the individual-level constructs, and the significant workplace IR climate variable was a grouped measure, associated with individual-level union commitment, controlling for individual-level climate. It seems unlikely that the negative association between workplace IR climate and union commitment could be attributable largely to common method bias, not least because workplace-level climate rather than individual climate ratings was significantly associated with union commitment. Fourth, we operationalized union commitment as a unidimensional construct, reflecting an affective dimension. As explained earlier, this provided a parallel conceptualization to our organizational commitment scale. However, a limitation of such an approach is that we do not include the behavioral intent aspects of commitment, such as Gordon et al's (1980) "willingness to work for the union". It would be useful to address this in future research by including behavioral commitment or union participation measures. Finally, our data came from one English region, the North East, an area traditionally characterized by a relatively pro-union culture. Whether our findings would replicate in regions with different historical and cultural legacies remains to be seen. Earlier mixed findings on the sign of the IR climate-union commitment association (Deery, Iverson, and Erwin 1994; Angle and Perry 1986; Magenau, Martin, and Peterson 1988) leaves open the possibility for country, regional, sectoral and occupational variations here.

We believe that this is the first time that IR climate has been formally assessed for its workplace-level characteristics, and that the antecedents of union commitment have been evaluated within a multi-level model. In spite of the limitations of the research, we have shown that it is appropriate to treat IR climate as a characteristic of the workplace

rather than purely as a perceptual variable, that the analysis of workplace climate is a fruitful area for research in industrial relations, and that such research might usefully incorporate a multi-level approach, analyzing the impact of climate and other workplace-level factors on individual attitudes and behavior.

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Table 1

Means, standard deviations, correlations and reliabilities (individual-level variables).

	Mean	Std. devn.	1	2	3	4	5	6
1. Union commitment	3.53	1.45	.92					
2. Union instrumentality	4.27	0.98	.54***	.90				
3. Pro-union attitudes	5.11	1.12	.55***	.43***	.85			
4. Job satisfaction	4.79	1.47	.05	.15**	.02	.84		
5. Organizational commitment	3.71	1.47	.20***	.26***	.12*	.59***	.84	
6. Psychological IR climate	3.57	1.35	-.03	.14*	.02	.51***	.46***	.89

Note. Reliability coefficients are shown on the diagonal. 2-tailed tests. $N=334$.

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 2 - Results of HLM analysis for the antecedents of union commitment

Independent variable	Null model.	Model 2.	Model 3.	Model 4.	Model 5.
<i>Level 1</i>					
Constant	3.54*** (0.13**)	3.53*** (0.11*)	3.53*** (0.10*)	4.65*** (0.08*)	4.61*** (0.09*)
Organizational commitment		0.12* (0.03)	0.15** (0.03)	0.16** (0.02)	0.17** (0.01)
Job satisfaction		-0.05 (0.01)	-0.02 (0.02)	-0.03 (0.02)	-0.03 (0.02)
Pro-union attitudes		0.50*** (0.02 [†])	0.49*** (0.01*)	0.49*** (0.01*)	0.69* (0.02*)
Union instrumentality		0.55*** (0.07 [†])	0.55*** (0.07*)	0.55*** (0.07*)	0.82 [†] (0.07*)
Psychological IR climate			-0.13* (0.02)	-0.07 (0.03)	-0.07 (0.03)
<i>Level 2</i>					
Workplace IR climate				-0.31**	-0.30**
Organizational commitment x IR climate					-- ^a
Job satisfaction x IR climate					-- ^a
Pro-union attitudes x IR climate					-0.06
Union instrumentality x IR climate					-0.08
R ² for level-1 model		0.48	0.49		
R ² for level-2 intercept model				0.13	

Note. Unstandardized coefficients with robust standard errors. Estimates of the random error variance components in parentheses.

N=334 for individual-level variables. *N*=31 for group-level variable (IR climate). ^a These parameters were not estimated, as explained in the text.

[†] *p* < .10; * *p* < .05; ** *p* < .01; *** *p* < .001.

Endnotes.

¹ Further details on the workplaces are included in an appendix, accessible at:
www.dur.ac.uk/tom.redman/DataAppendix.doc.